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Treatment of Bronchial Asthma and Hay Fever With Cyclopropane

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The multiplicity of therapeutic agents recommended as beneficial in the treatment of asthma shows that many claims are not completely justifiable. In this paper, we are only giving a report of our experiences in the treatment of asthma and hay-fever with cyclopropane anaesthesia, the results have proved most interesting to us.

Our first experience with cyclopropane in asthmatics occurred accidently. We had a patient with an acute appendix and due to an extremely "wet" chest cyclopropane was used as the anesthetic of choice. This was on April 3, 1939. During convalescence he drew our attention to the fact that his chronic asthmatic condition had disappeared. We wondered if the anaesthesia had had anything to do with it and decided to use it on another case. The results were again impressive.

Clinically, three main groups of asthmatics may be distinquished: (1) the allergic group, (2) the reflex group (3) the bronchitic group. There are many cases of asthma, however, which cannot be placed in any of the above groups. They do not present features sufficiently well understood to form a well-defined independent group. They may be associated with chronic sepsis, dyspepsia, or with a generally unstable nervous system.[1] The cases in this report treated with cyclopropane have been taken at random with no effort made to classify them into any of the above groups.

Cyclopropane is a saturated hydrocarbon gas prepared by the reduction of an alcoholic solution of trimethylene bromide in the presence of metallic zinc. Its formula is C_3H_6. The gas liquifies at seventy-five pounds pressure at a temperature of 70 degrees Fahrenheit. It is about one and one-half times as heavy as air, having a density of 1.46 and a molecular weight of 42.95. It is inflammable when mixed with air in percentages of 3.0 to 8.5 or with oxygen in concentration of 2.5 to 50.0 per cent[2].

The administration is begun with a rapid flow of oxygen (6-8 liters per minute) as the mask is placed on the patient's face. Helium, which is readily diffusible, is added at approximately one liter per minute. The patient is allowed to breath this mixture for eight or ten minutes in an attempt to supply adequate oxygen tension in the alveolar air and thus overcome the threat of asphyxiation provoked by the narrowed bronchi and bronchioles that exists in these cases in varing degrees. Cyclopropane is then added at the rate of 300 cc to 500 cc per minute at intervals until the patient is completely relaxed and breathing freely.

To date, our series consists of twenty asthmatic and four hay fever patients ranging from three years to sixty years of age. In two of the recent cases, it is yet too early to tabulate the results. Two were morphine addicts, in which we obtained no results. One developed a ventricular fibrillation during the induction. Excluding these three cases we have obtained excellent results. We have obtained relief over

a period of from six to sixteen months before recurrences occurred. All of these cases were induced during attacks and some were relieved from all their symptoms immediately upon reacting from the anaesthesia. All the acute distress was relieved upon regaining consciousness. Those cases in which total relief was obtained cleared in from ten to fourteen days. After the 14th day, the typical chronic wheezing disappeared. During the first two weeks, one or more acute paroxysms may occur. There is considerable coughing for 10 to 14 days. The patient expectorates a large amount of greenish-brown sputum. This bringing of sputum is assisted by postural drainage twice daily, and at times a mild expectorant cough mixture is administered. Small doses of tincture of belladonna or soda bicarbonate twice daily, during this interval of 10 to 14 days was administered apparently with beneficial affect. As has been stated, we have made no attempt to classify the patient before treatment, no skin tests have been made. However, we do a thorough physical examination.

One patient, a child three years old, was apparently sensitive to everything. The parents had placed her on an eliminating diet, removed the cats, dogs, mattresses, pillows and so forth from the home and finally took the child to another house with no results. After receiving the cyclopropane which was administered the first time for 15 minutes, she was relieved of asthma within seven days. The anorexia disappeared and she immediately began gaining weight. At the end of the first month the patient was taken to her home with the same furniture, mattresses, and pillows and so remained relieved for a period of exactly six months. She then had another acute paroxysm, and all her symptoms recurred including her anorexia. At the end of two weeks she was given cyclopropane again and this time was anaesthetized for a period of thirty minutes. After the patient reacted from the anaesthesia, she, within two hours, ate a large lunch and in the evening a large dinner. After ten days, during which time she had one acute paroxysm, the chronic wheezing disappeared and apparently has been completely well since.

Another case, a male, aged sixty, developed a ventricular fibrillation before he had been completely relaxed. The anaesthesia was discontinued immediately and oxygen administered and the fibrillation was arrested. This patient had had a persistent attack of asthma for a period of three weeks or more and was taking adrenalin in oil four or five times in twenty-four hours, and was also using an adrenalin spray at frequent intervals. Upon investigating it was found that "cyclopropane so sensitized a heart that the administration of a small amount of epinephrine may throw it into a ventricular fibrillation."[3] Since this time, we have attempted to make certain that a patient has had no adrenalin for at least 72 hours preceding this treatment and thus far we have had no difficulty and have not had to stop the anaesthesia.

Early in this series, we used as routine morphine sulphate and atropine sulphate 45 minutes before treatment. Occasionally, particularly in young people, this was not administered and we noted that they took a better anaesthesia. Investigations show that large injections (in the case of the normal cat) "lead to very considerable constriction of the bronchial muscle after an initial transitory small dilatation, and this after the vagi are out."[4] It is known that morphine sulphate depresses the respiratory system and cough reflex and occasionally patients are sensitive to this drug. We have now discontinued the use of morphine sulphate and atrophine sulphate, prior to the administration of the anaesthesia.

In all of the cases a complete physical, a vital capacity and differential blood smear was made upon admission to the hospital. In every case the vital capacity was diminished from one-third to two-thirds of the normal and there was an eosinophilia present in all cases. Regardless of the rales and wheezes present upon ausculation of the chest immediately prior to the treatment, mid-way during the anaesthesia or at the depth of the anaesthesia the lungs are perfectly clear and no rales or wheezes are heard.

Generally when death occurs in allergic asthma, it is due to obstruction of the bronchi by thick tenacious mucous that is formed during the course of an attack. Occasionally death

is due to edema of the alveolar spaces.[5] Helium, which is also used along with cyclopropane is a very diffusible gas and may account for the complete displacement of the residual air in these alveoli, which are possibly filled with harmful inhaled antigens and mucous plugs. The replacement with cyclopropane and oxygen may be in part the source of relief.

When no relief is obtained from adrenalin, there are numerous procedures which may interrupt an attack such as, hypertonic dextrose solution intravenously, ether in oil or avertin rectally, ether inhalation anaesthesia, various barbiturates intravenously or with lipiodal intrabronchially. The inhalation of cyclopropane and helium makes possible a more normal velocity of gas movement with diminished response effort in the sensation of dyspnea in asthmatic patients. Cyclopropane induction is performed much more rapidly and with less irritation to the respiratory tract than with ether. It induces rapid anaesthesia so that the patient's cardiac reserve is not further imposed on by a stage of excitement.

Status Asthmaticus or "asthmatic crisis" characterized by severe collapse with constant and extreme dyspnea to the point of exhaustion respond readily, at least temporarily. But, if the patient has had adrenalin, this makes the administration extremely dangerous.

Occasionally in an alcoholic, it is necessary first to induce the patient with ether and then switch over to cyclopropane. This procedure has been used with success. This method was used April 27, 1940, on a patient who had chronic wheezing with an occasionally acute parozysm over a period of months. On the first attempt it was impossible to relax the patient and it was necessary to make another attempt (April 27, 1940) after which we obtained good results.

The economic condition of the majority of asthmatic patients precludes any protracted hospitalization. This, in itself, makes it most difficult to study these patients closely after treatment and thus come to any definite conclusions as to what actually takes place.

Thus far, there have been only four cases of hay-fever treated with this method. Two were operative cases but cyclopropane was used specifically for the purpose of watching the results of the hay fever. It has been more than eleven months and neither of the patients has had a recurrence.

SUMMARY

(1) In this series of twenty asthmatic patients with two unclassified, we obtained relief varying from six to sixteen months in sixteen, and the four patients with hay fever have not had a recurrence.

(2) It has been used by us in hay fever as well as asthma with beneficial results.

(3) Cyclopropane is not without danger. However, we used it in more than one-hundred routine surgical cases without tragedies.

(4) The use of adrenalin, within 24 hours prior to administrating of the gas, adds to the risk.

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Intestinal Infestations

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Among the more constant types of cases presented for medical attention are those of patients with chronic diarrhea, patients with intermittent diarrhea and constipation, and of patients with indefinite gastro-intestinal symptoms for which no cause can be found.

The laboratory and roentgenologic findings in these cases show no regular pattern. The gastric analysis may show an increase or a decrease in gastric acidity, and occasionally a case is found with no free hydrochloric acid. The administration of alkalies or of dilute hydrochloric acid does not relieve the symptoms. Examination of cold stools and of warm stools voided in the laboratory has usually been of no assistance, in our hands, in diagnosis and treatment.

Roentgenologic examination of the gastro-intestinal tract reveals no specific disease and no characteristic findings. Some may show a spastic condition of the prepyloric area of the stomach and of the duoednal cap, or a spasm of the entire duodenum; others, spastic areas in the colon; still others, spastic conditions in all three sections. In a few patients, there is a marked irritability of the entire gastro-intestinal tract, accompanied by an increase in peristalsis, so that the barium travels from the mouth to the anus in three to six hours. On the other hand, with some patients the roentogenologic examination reveals nothing which may be termed abnormal or unusual. In the patients with the spastic areas, atropine and other antispasmodics do not give definite relief of symptoms.

In the first sixteen years of our private practice, from shortly after the war to four years ago, there were diagnosed in our office 32 cases of intestinal infestation, as follows:

Endameba histolytica 11.
Giardia lamblia 4.
Trichomonas hominis 4.
Necatur americanus 5.
Taenia saginata 3.
Strongyloides intestinalis 3.
Oxyuris vermicularis 2.

During this same period there were 49 cases of enterocolitis with either a chronic diarrhea or with an intermittent diarrhea and constipation for which no cause was found. Undoubtedly there went undiagnosed a number of other cases with gastro intestinal symptoms indefinite and inconsiderable in comparison with the patients' major complaints.

The specimens handled in the laboratory in those years were routinely either cold stools or warm stools passed either in the laboratory or at home and kept warm during transportation.

Four years ago we changed the technique of specimen collection, and our present practice is to have the patients suffering from the above-described symptoms to bring in one stool for routine examination, and then to take a saline laxative while in the office. The laxative is most effective when administered on an empty

stomach, and followed by a normal meal. The resultant stools are collected in the office, usually four to six specimens.

The identification of these various parasites will not be discussed in this paper, since we have nothing to add to the discussions to be found in the various textbooks on the subject.

During these four years we have found 42 cases of intestinal infestation, as follows:

Endameba histolytica 5.

Endameba histolytica with Giardia lamblia 1.

Endameba histolytica with Trichomonas hominis 2.

Giardia lamblia 13.

Trichomonas hominis 13.

Giardia lamblia with Trichomonas hominis 1.

Chilomastix mesnili 4.

Strongyloides intestinalis 1.

Oxyuris vermicularis 2.

In this latter period there have been examined only three cases with a chronic diarrhea in which we were unable to demonstrate some form of infestation, as compared with 49 cases before we began the examination of multiple stools after saline laxative.

Of the 42 patients with infestation as listed, 16 were males and 26 females. All were white. Social and economic status appeared to hold no significance: There were included doctors, doctors' wives, preachers, teachers, librarians, nurses, students, salesmen, housewives, beauticians, office workers, textile engineers, farmers, merchants, business executives. The age range was from 8 years to nearly 70.

The symptoms manifested by these patients may be classified as (1) gastro-intestinal, (2) nervous and emotional, and (3) general.

The gastro-intestinal symptoms were, in order of frequency:

Constipation, vague indigestion, gas, diarrhea, diarrhea alternating with constipation, fulness and pressure, "heart-burn," nausea, nausea and vomiting, anorexia, vague abdominal pains, cramps, attacks of acute abdominal pain, and hematemesis.

From a nervous and emotional standpoint, many of these patients suffered from a definite neurosis. They complained of nervousness, insomnia, the sighing type of respiration with shortness of breath, depression, uneasy feeling about the heart with palpitation. One young man had hot flashes and a burning sensation over his legs, and another had numbness of his legs. Four patients complained of frequency of urination and discomfort in the bladder. Three had disturbances of vision.

From a general standpoint, there were malaise, loss of weight, headaches, vertigo, intermittent fever, muscular aching, and arthritic pains. A large percentage of them complained of recurring attacks of herpes labialis and mouth ulcers, one or both together.

Since a considerable number of our patients come to us originally for an allergic survey, the fact that 19 of these 42 patients suffered from some form of major allergy is interesting but of questionable significance. The allergic manifestations included urticaria (8), allergic coryza (8), gastro-intestinal allergy (5), angioneurotic edema (5), asthma (4), migraine (2), allergic joints (1), and cerebral allergy (1).

While we examine stools routinely in our allergic cases, we give the saline laxative for warm-stool collection only in the presence of definite clinical indications for such examination.

Several years ago, Dr. G. W. Owen,[1] of Jackson, Mississippi, advanced the theory that intestinal infestations were responsible for much food allergy. His idea was that the parasites produce a chronic inflammation of the intestinal tract which permitted food to be absorbed in an unchanged state, thereby producing a sensitization to such food.

We were permitted some time ago to see a laboratory demonstration of the work of Dr. Bronfenbrenner,[2] of the University of St. Louis, which lends some weight to this intestinal inflammation theory. Dr. Bronfenbrenner produced scurvy in guinea pigs by feeding them a diet free or nearly free from vitamin C, following which he fed them egg-white by mouth, and three weeks later he was able to demonstrate marked sensitivity to the egg-white. When some pigs left in the state of scurvy were fed egg-white again after the demonstration of sensitization, they evidenced symptoms of acute anaphylactic shock and died. The pig would first become uneasy, then scratch

his nose, then cough, double up with cramps, pass bloody mucus from an anus and finally die. The pigs which were given egg-white in the state of scurvy but were allowed to recover from the scurvy showed milder symptoms after being fed egg-white, after the three-week interval, but did not die.

Most of our 42 patients had had much other treatment before coming to us. Eight had been operated on for chronic appendicitis and two others had had exploratory laparotomies for possible gall bladder disease. None of the ten operated on had been relieved of their symptoms by the operations.

Some years ago, in reviewing the literature on the diagnosis and treatment of amebic infestations of the colon, we were greatly impressed by the preponderance of reports by the British, who seemed to have had more experience in treating intestinal infestations than any other one group.

About the same time we discussed the treatment with Dr. Trimble Johnson, of Atlanta. Dr. Johnson[3] stated that amebic infestation of the colon will be cured by using some bismuth product to constipate the patient and then giving the patient alcresta ipecac, 10 grains four times a day. He starts the patient on a slightly heaping teaspoonful of bismuth subnitrate three times a day, and increases this dose by one teaspoonful each day until the patient is constipated. That is, the first day's dose is one teaspoonful three times a day, the second day's is two teaspoonfuls three times a day, and so on. If it seems impossible to constipate the patient by bismuth alone, he suggests the addition of one dram of tannigen to each ounce of bismuth subnitrate.

If possible, the patient is kept in just a slightly constipated state. If the bismuth constipates too much, Dr. Johnson administers a good big dose of castor oil, and then starts over again. He advises against the use of emetine, as a rule.

It happened that when we first began to see cases of amebic infestation we had to treat several patients who had been treated off and on for months or years without response, so we began to use a combination of Dr. Johnson's treatment and what the British recommended.

For uncomplicated cases our present method is as follows:

1. In cases with acute diarrhea, we give a course of emetine using 1/2 grain to 3/4 grain every day or every second day for twelve doses, provided there is not too much local reaction, no signs of beginning neuritis nor of myocardial weakness.

2. Bismuth subnitrate is given every day for one month in quantities sufficient to constipate; tannigen, if necessary.

3. Alcresta ipecac, 10 grains four times a day, is given for one month.

4. During this same time, after the administration of the emetine is finished, we give a course of neo-arsphenamin, 0.3 gram to 0.45 gram every five days for four to six doses.

5. After the course of arsenic, bismuth and ipecac is finished, fifty doses of emetine bismuth iodide are given, one dose three times a day.

6. Following this, a course of one of the other preparations commonly used, such as chiniofon, carbarsone, vioform or diodoquin, is given for two weeks. We recommend vioform, grains 6 to 10 three times a day.

7. Following the vioform, fifty more doses of the emetine bismuth iodide are given.

8. The patient is allowed to rest for one month, and then requested to come back to the office for another saline laxative and examination of six stools.

This treatment is usually efficacious also for Trichomonas and Chilomastix, but for infestation of these parasites alone we use mostly vioform or diodoquin. There is also recommended a colon irrigation of 1:5000 copper sulphate at a temperature of 43° C. to 45° C.

For the Strongyloides intestinalis the simplest treatment which seems to be efficacious in most instances is enteric-coated pills of gentian violet, 2 1/2 grains, one pill three times a day before meals for two or three weeks.

Our treatment for round-worms, pinworms, tapeworms and hookworms has been conventional and almost always successful.

Judging from the literature and my own short experience, the most difficult parasite to get rid of is the Giardia lamblia. We have discarded all other treatments for the one recom-

mended by Dr. Horace Soper, of St. Louis, which is as follows:

For a 150-pound patient Dr. Soper recommends:

1. A light evening meal.
2. Five grains of calomel at bedtime.
3. One ounce of pluto water with one ounce of water early the next morning.
4. No breakfast except a glass of water or weak tea.
5. Neo-arsphenamine, 0.45 gram.
6. Light lunch and supper.
7. Next morning give a light breakfast or none at all.
8. Neo-arsphenamine, 0.6 gram.

This treatment makes most people rather sick, but it is not unbearable and seems to be efficacious with the first treatment in more than fifty per cent of cases of Giardia lamblia. We have had, however, two cases which still showed the presence of Giardia in the stool following two courses of such treatment.

In cases of chronic diarrhea or dysentery and in cases of intermittent diarrhea and constipation for which no cause can be demonstrated, we give the treatment for amebic infestation as outlined above, and in all but three cases of diarrhea and dysentery the symptoms have been relieved. We believe that this is a justifiable treatment under such circumstances.

SUMMARY

1. It seems not only possible but probable that a fair percentage of our local population is suffering from some form of intestinal infestation.[5]

2. Symptoms are variable but may be gastro-intestinal or neurotic in type or general over the body.

3. It seems wise to suspect intestinal parasites as a possible cause of symptoms not otherwise explained.

4. In suspected cases, diagnosis seems best obtained by examining one or more stools voided in the usual manner and at least six stools voided in the office following a saline laxative.

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Invitations have been received to the annual celebration of Founder's Day at the Medical College of the State of South Carolina November 6th, 1941. The program calls for clinics during the morning, a pathological conference during the afternoon and a banquet during the evening at which the main address of the day is to be delivered by Dr. R. A. Ross, Associate Professor of Obstetrics and Gynecology, Duke University School of Medicine. His subject: **Medical Organizations and Education in a Neighboring State.**

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The Practical Management of Infantile Eczema*

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The term "eczema" was formerly used as a scrap heap into which were thrown all of the inflammatory skin conditions accompanied by exudation. It was not until thirty years ago that we began to know something about allergy, and it was not until about twenty years ago that we began to know something about fungi as a cause of skin diseases. Since these two discoveries the eczema group has been classified according to etiology as follows:

1. Dermatitis Venenata, which is produced by an allergen coming in contact with the skin. The individual has to have been previously sensitized before he can develop it. Poison ivy dermatitis and house-wife eczema of the hands are good examples.

2. Seborrheic Eczema, which is an exudative inflammation due to the same germ that causes dandruff and has a predilection for the scalp, ears, center of face, chest, back and groin.

3. Hemostatic Dermatitis, as the name implies, is due to poor circulation and occurs usually on the lower half of the legs of the elderly, or people with an obstruction to circulation such as varicose veins. This condition usually precedes and accompanies hemostatic ulcers.

4. Infectious Eczematoid Dermatitis is the type of eruption originating from an area bathed more or less constantly in pus, such as the ear and neck in cases of chronic otitis media, and around the borders of a draining sinus such as a boil or infected surgical incision. The person becomes sensitized to the bacterial products; there is peripheral extension, and distant areas may become involved either by mechanical or hematogeneous dissemination of the toxins.

5. Dermatophytosis is the term used to denote an eczematous response to the products of fungi. We now recognize sixteen varieties of pathogenic fungi and some of the eruptions caused by the different species are quite characteristic.

6. The sixth type, and the one which is most common in children, is Atopic Dermatitis. By Atopic we mean the condition is familial and is due to allergy; and by allergy we mean a specific alteration in the capacity to react to an endogeneous or exogenous substance. Atopic Dermatitis runs a fairly characteristic course. First, the individual has a variable amount of eczema when a baby or small child, and as he grows older he usually outgrows his eczema and is a likely candidate for other allergic manifestations such as urticaria, hay fever, asthma, migraine, intestinal allergy, etc. It is said that any organ in the body may be affected.

But in the infant, and by infant I mean a child from birth to the age of two years, the skin bears the brunt of the attack. It is rather unusual to see allergic manifestations involving any other organ in infancy, though it does occur infrequently. About 80% of cases of infantile eczema belong to this group.

The causative agent is usually one or more articles of food, and, in the order of frequency, the most common ones are milk, eggs, oranges, wheat, tomatoes, and oats. Less frequently is it due to the inhalants such as feathers, house dust, hair of various kinds, and silk.

It occurs most often in fat, overweight, otherwise healthy infants. The first sign of the eruption usually appears during the first six months of life and consists of a papular or papulo-vesicular eruption on the cheeks which tends to spread later to other parts of the body, chiefly to the scalp, cubital and popliteal spaces, the wrists, and lower part of the legs. At times it becomes generalized.

The individual lesion begins as a small area of inflammation which soon becomes edematous, then vesicular. When the vesicle ruptures serum exudes, forming a crust. It is never

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pustular unless secondarily infected. When resolution sets in it stops oozing and becomes scaly, then gradually the skin returns to normal. It may abort at any of these stages. That is, it may abort at the erythema stage and return to normal or it may abort at the edematous stage and never produce a vesicle. If it becomes infected there may be a tremendous enlargement of the regional lymph nodes.

The only constant change in the blood picture is an eosinophilia of about 5 to 15%.

The management of cases of infantile eczema may logically be divided into etiologic and symptomatic treatment.

Etiologic treatment is aimed at removing all probable causes of the baby's trouble from his diet and from his environment. If possible it is best to put him in a room from which all carpets, curtains and upholstered furniture have been removed. Wooden or steel furniture, cotton mattress, cotton pillow, and white cotton clothing and bed clothing should used. Furniture, walls, and floors should be wiped with a damp cloth often enough to keep them free of dust. When clothing and bed linen are washed they should be thoroughly rinsed so as to remove all traces of soap. Whether soap is the cause of the eruption or not it will make it worse. Diapers should be soft and loosely applied. Rubber pants should not be worn. The baby will get along better if kept in bed. Fingernails should be cut as short as possible as the more the eruption is scratched the more it itches. To prevent scratching cardboard armlets may be tide around the arms, or, if necessary the hands should be tied to the side of the bed. The baby must be made to stop scratching. Sedatives such as phenobarbital or chloral hydrate are often of great value.

The baby should be cleansed as a newborn is cleansed, with olive oil, sulfonated oil or mineral oil.

Diet regulation is of primary importance. Close observation of the effects of the withdrawal of, and re-exposure to, various foods proves more successful in determining the etiology of this type of eczema than do skin tests. Skin tests in children under two are unreliable.

It is best to start the baby off by eliminating everything except the milk he is already taking. If he is sensitive to this milk, goat's milk is tried, and if he is sensitive to goat's milk switch to a soy bean milk such as Sobee or Mulsoy. In children over 7 months of age rice can be safely added as it is rarely an offender. After a milk has been found that agrees with the baby one article of food is added every four to seven days. If he has a flare up the last food added is withdrawn for several days, then added again. If a second flare up occurs that food is withdrawn for one year, at the end of which time the baby will probably no longer be sensitive to it.

The necessity of vitamins and calcium should always be kept in mind when these are restricted in the diet.

The local treatment of these patients is extremely important, and I want to stress the fact that it must be varied with the character of the lesions.

Here is a brief outline of the topical remedies for use in each of the various stages. We will begin with a severe case with vesiculation, oozing, crusting and secondary infection. In this type of case begin with wet dressings of one part Burows Solution in thirty parts of two percent Boric acid solution. The dressings should be only three or four layers of gauze thick, and the solution should be applied at room temperature. When the infection is controlled switch to One-Two-Three ointment, which is Burows Solution one part, Anhydrous Lanolin two parts, and Lassar's Paste three parts. When the exudation has practically stopped change to plain Lassar's Paste (N. F.) without Salicylic Acid. This should be applied heavily and bandaged. When it improves to the stage where there is only erythema and scaling mild tars are indicated. Five percent crude coal tar in Lassar's Paste or White's Ointment (N. F.) are very good but are messy unless covered with a bandage. White's Ointment is:

Crude coal tar	2	Mix	Mix
Zinc Oxide	2		
Corn Starch	16	Mix	
Petrolatum	16		

Naftalan, Naftex and Dernaftan are good, mild tars which do not stain and are all used in three to ten percent strength.

If the skin remains somewhat thickened and scaly as it is apt to do, especially in older children, use a more penetrating tar such as five percent crude coal tar in half and half lanolin and vaseline.

In mild cases where there is severe pruritis but no vesiculation or exudation it is well to use an emulsion in the daytime, such as Calamine emulsion N. F. to which may be added one-tenth to one quarter percent menthol and one quarter to one half percent phenol. A soothing ointment is used at night. An example of the latter is cold cream containing thirty grains of Zinc Stearate to the ounce.

In the very mildest cases where there is only a little erythema and edema the following is good:

Rx Oleated Mercury ----------1 to 2%
Resorcin ----------2%
Liquor Carbonis Detergens ------2%
Vanishing Cream ----------qs.

This should be rubbed in well three or four times a day. The best of the proprietary preparations for such a case is Mazon Ointment.

There is one more point I want to mention. If there are any symptoms of a thyroid deficiency thyroid extract will often be of great value.

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OF THE
South Carolina Medical Association

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SLACKERS OR PATRIOTS

In the September, 1941, issue of Southwestern Medicine appears an editorial entitled One Clear Call, and the first two paragraphs read as follows:

"Much concern has been expressed regarding the response of a portion of the medical profession to the need for physicians in the armed services. Many of the younger doctors have refused to accept duty with the army or navy, adopting varied reasoning and excuses for their actions. Prominent among the statements made by some is that 'I would go in a minute if we were in war.' Of course, if enough go now and assist in demonstrating to the jackals of the world that Uncle Sam has a good strong right arm ready and tough, we may have no war. If war can be prevented in this manner from touching America, surely those men who serve now in the grand program of preparedness and training are even more entitled to the designation 'hero' than those who jump in when the fire has started. It is easy to give service to one's country when the cannon roars and personal fears and emotions are aroused. It is more difficult to arrive at decisions involving such intangibles as loyalty, patriotism, self-abnegation and personal sacrifice when no bombs are falling into one's own backyard. Yet, of such intangibles were the tough, fine men of a former day in America made. Such qualities are expected of physicians, of all men. If they be not present in that body of citizens, surely the splendid ideals of service we have long advocated must then have been mere mouthings of egotists.

"Deplorable is the descent of the physician into the market-place, setting a price on his services and haggling over dollars and goods like a common fish-wife. Some of our brothers cry for their palms to be crossed with silver for their services in examining draftees. Others tell of how much more money they can make at home in comparison to their salary as an officer in the service of their country. By these short comings the medical men of America are now being judged by their fellows—make no mistake about that! If there be one who doubts that, or who is serenely confident of his halo, let him but put his ear to the ground and listen, like he never has before in his life. Let him put away the nostalgic wishes for the good old yesterdays, and listen and heed. Let him answer the call of need of his land. Let him in so doing repay a part of the debt he owes that land for his education, his heritage of freedom, his very life."

Today sentiments such as these appear as slight whisperings in the trees but by tomorrow they may become a roaring wind.

That younger physicians are not volunteering in large numbers for service in the armed forces in a fact which anyone who has made the most cursory of studies will recognize. But is this due to a lack of patriotism, as the quotation above suggests? Are our younger

physicians less willing to serve their country today than they have been in the past? We answer with a resounding, No. We do not believe that our younger physicians are any less loyal to the United States today than they were twenty or forty or eighty years ago and we are glad to raise our voice in their defense.

Why do not our younger physicians rush forward and volunteer their services for military duty at the present time? It seems to us that there are three definite and logical reasons for their action.

In the first place they do not feel that the army needs them now. They have talked with many medical officers and have received the same type of information which we have received in private conversation and which can be exemplified by the following statement, lifted from a talk with a young lieutenant in the medical corps. "The biggest drawback to our work in the army is that we have so little to do. There are five doctors in my outfit and none of us are kept busy with medical work and the only time we are forced to expend much effort is in doing 'paper work.' Several months ago my four colleagues were sent away for special training and I had all the medical work in our outfit to do, and those were the happiest days of my military service. Of course, if we go to war they will probably keep us busy but at present we spend a large part of our waking hours whiling away the time. Any of us could do two or three times as much medical work as we are now doing and still not be as busy as we were in private practice."

When a young physician with an active practice hears statements such as this there is naturally no incentive for him to give up his work to join the group of those who have so little to do. From information which he has at hand, he does not see any crying need for his medical services in the army at the present time and it is only natural that he should refrain from volunteering. Should war come and should he feel that his services could be used to advantage, he will not hesitate to volunteer.

Secondly, the young physicians do not believe that they need the same amount of training for military service as do the draftees. Four years in medical school, one to three years in internship and several years of practice have taught them the essentials of medical practice. They feel that their greatest service to their country can be rendered through the medical education which they have already received. They realize a certain amount of military training is necessary to acquaint them with the general routine of a military organization and this they are willing to undergo, but they do not see the rationale of spending twelve to eighteen months in the army to prepare for medical service. A limited and intensive course in special phases of military medicine would give all the special work they need and this they would accept but they can see no reason for the volunteering of services for a longer period of time unless the emergency is upon us.

Lastly, the younger physicians, at least those in this section of the country, feel that they are serving the public in their present locations, and by serving the public they are serving their country. Many of these younger physicians are vital medical factors in their given communities and there is no one to take their places should they volunteer. They are willing to serve their country wherever the need is greatest but they are not yet convinced that the need in the army at the present time is greater than the need at home. There has been no general call for physicians to volunteer for the army. Appeals have been made indirectly through various army medical officers but no challenging statement has been issued from the President, from the Secretary of War, or from the Surgeon-General of the Army. Should such a call be issued there is no doubt in our mind that the young physicians of the country would respond with enthusiasm, but until they are convinced that they can render a greater service to the country through military service than they can by staying at home and taking care of the people now in their charges, they are not ready to volunteer.

Undoubtedly there are in the medical profession, as there are in any group of professional or business men, those who base their decisions entirely upon selfish reasons—but we do not feel that such are in the majority. We

believe that the three reasons given above are the main reasons why the younger physicians are not volunteering for military service today. After all, is it any less patriotic for a physician to stay at home and to be on call for twenty-four hours out of twenty-four, serving the public at large, than it is to join the army as a medical officer and there spend much of one's time doing little in the line of treating the sick? We do not believe that it is, and we again reaffirm our faith in the patriotism and the loyalty of the young physicians of today.

The great single drawback to football is the toll of injuries which follows in its wake. Probably the most frequent injury encountered is the *football knee*. Dr. J. H. Boland presents the following discussion in the January, 1941 issue of the Journal of the Medical Association of Georgia and it should be of interest to all physicians who are in any way connected with football players.

"It wasn't so very long ago that when a player received a football knee he was considered out of football and other athletics forever. It was even considered that the boy had been made a cripple and semi-invalid for life by the game. However, parents, players and coaches have learned that with proper treatment a boy can be made fit again for football and other athletics, and even if the boy decides or is persuaded to give up strenuous athletics he does not have to go through life crippled with a football knee.

"The diagnosis of a football knee is at times difficult and unless the diagnosis is fairly certain too much cannot be promised as in any other medical or surgical condition. The treatment is either conservative or surgical. The important part of the conservative treatment is a long period of rest. This does not mean a few weeks rest from scrimmage with daily laps around the field and other exercise to keep in condition for a game a few weeks off. It means absolute rest which usually requires a plaster cast and crutches, for one to two months. This is followed by physiotherapy to restore motion and the tone and strength of the surrounding muscles and ligaments. The conditions which may be cured by conservative treatment are principally partially torn lateral and cruciate ligaments, chronic traumatic synovitis and bursitis, fibrosis from bad bruises in the surrounding ligament or ligaments, and Osgood-Schlatter's disease found occasionally in the younger players. At times surgery is indicated in these conditions.

"A torn or dislocated internal semilunar cartilage is the condition most often requiring surgery for cure of a football knee. Other conditions diagnosed in football knees requiring surgery are loose osteocartilaginous bodies, badly torn lateral or cruciate ligaments, fractures of the tibial spines, recurrent dislocation of the patella, and damage to the external semilunar cartilage. Immediately following the initial injury a definite diagnosis is made very easily or not at all. That is, the exact condition is very obvious or it will be masked by the pain, swelling, and muscle spasm. Conservative treatment is always indicated at this time except for one condition. This is with a locking of the joint which cannot be loosened by manipulation. Often the boys appear for examination and diagnosis when all symptoms have subsided and very few significant signs are present. If the X-ray films are negative, which is the usual case, the diagnosis is difficult but can be made with a very careful history and examinations repeated on one or two different occasions.

"While the chronic joint does not require operation as soon as the diagnosis is made it is advisable that operation not be deferred too long because with recurring intraarticular irritation a chronic synovitis or osteoarthritis is set up. Also it is to be remembered that the sooner the operation the sooner the player will be ready for play.

"Following surgery is the time that the trainers play a very important part in the treatment. An attempt should be made with physiotherapy to gain motion and function progressively but gradually. This is especially true in the first six weeks after operation. If the treatment is applied too vigorously a longer period will be required to obtain the final result than if no physiotherapy had been used at all except by the boy himself."

Mayor F. H. LaGuardia, Director of the Office of Civilian Defense, today announced the appointment of Miss Marian G. Randall as Nursing Consultant in the Medical Division of the Office of Civilian Defense.

Miss Randall is on leave of absence from the Henry Street Visiting Nurse Service, New York City, where she is Assistant Director.

For eight years a member of the Research Staff of the Milbank Memorial Fund of New York City; Miss Randall conducted studies of public health nursing as related to administrative practices. A series of these studies has been published in pamphlet form.

PRACTITIONER'S PAGE

This page is devoted to the everyday problems of the physician in practice. Members of the Association are urged to suggest subjects for articles which they desire discussed. Members are also urged to submit questions. Each question will be referred to some physician who is qualified to make answer, and if the question involves a subject of general interest, the answer will be printed.

THE PROBLEM OF VITAMIN D

Roe E. Remington, Ph.D., D.Sc.
Professor of Nutrition
Medical College of the State of South Carolina

Specifically vitamin D increases the absorption of calcium and phosphorus from the intestines. Together with the parathyroid hormone, blood phosphatase, and other factors, it regulates the metabolism of these elements in the body. By maintaining a sufficiently high concentration of calcium and phosphate ions in the blood, it promotes growth of bones and teeth. For the growth of the skeleton in infants and children, and very probably for its maintenance in older persons, there is required not only an adequate supply of the vitamin, but also adequate intakes of calcium and phosphorus in a ratio of between one and two parts of calcium to one of phosphorus. Deficiency or excess of calcium beyond these limits upsets the equilibrium between these ions in the blood, and makes the deposition of calcium phosphate in bones more difficult.

Since foods that are well supplied with vitamin D are not numerous, the providing of an adequate supply of it through food alone to the fetus (through the placenta), and the infant, present perhaps the most difficult problem in vitamin nutrition. Before birth adequate calcium and phosphorus are provided by the mother, even at the expense of her own body, and after birth these elements are found in satisfactory amount and good proportions in milk. The action of sunlight (and ultra-violet light) on the skin is an important source of vitamin D. However, on account of differences in the ultra-voilet intensity of sunlight at different seasons and in different latitudes, and the differing degrees of obstruction presented by pigmentation in the skin of different individuals, it is difficult if not impossible to evaluate the amount of vitamin D produced in this way.

It is now routine to give the vitamin in the form of fish liver oils or their concentrates, or solutions of irradiated ergosterol, to the mother during the later months of pregnancy, and to the child during its first year of life. Fish liver oils and irradiated sterols have not been available to all peoples throughout all times, hence protection must have been afforded by sunlight, aided by the rather small and decidedly variable amount contained in natural unfortified foods. That people have gotten along as well as they have through the ages is perhaps the best testimonial to the value of sunlight.

Our ideas as to the quantitative vitamin D requirement have been constantly revised upward during the past few years. Starting with an amount which would prevent definite symptoms of rickets (originally believed to be 100 to 125 International or U. S. P. units per day), we have added the concept that optimal growth requires considerably more than simple protection against rachitic signs, up to 300 units per day. Early this year the Committee on Foods and Nutrition of the National Research Council has set 400-800 units as the requirement for the latter half of the period of gestation and during lactation in women, and for the first year of life for the child. During later childhood and throughout adult life it should probably be supplied in about the same amount if not furnished by exposure to sunlight.

The addition of vitamin D to milk (which already contains the needed calcium and phosphorus) by one means or another, was a great step forward. However, in view of our present ideas as to daily requirement, some forms of vitamin D milk may fall short. Irradiated vitamin D milk was originally standardized at 135 units per quart, and there are difficulties in increasing this amount. Addition of vitamin concentrates to milk can, of course, be done in any amount. Such "fortified" milk, formerly standardized at 300 units per quart,

is now obtainable from some dairies at 400 units. Irradiation of the cows, or feeding of irradiated yeast to cows, increases the vitamin D content of the milk, but cannot be as readily controlled as the other methods.

After the first year of life the problem is apt to be complicated by that of providing enough calcium. A diet mainly of cereal grains, or cereals and meat, without milk or with a minimal amount of milk, will fail with respect to calcium. Most nutritionists recommend at least a pint of milk per day for adults and children alike.

The cost of providing infants with the necessary vitamin D is receiving attention from the Committee on Nutritional Problems of the American Public Health Association (of which the writer is a member). If the entire 800 units is provided from pharmaceutical sources, it is possible for the cost to run as high as seven cents a day or more. Add to this the cost of the necessary fruit and vegetable juices to provide ascorbic acid, and it is easily possible to spend half of the baby's food allowance for these two items. This problem is particularly vital in families of low income, or on relief. In one city physician consultants were found to be recommending infant diets costing over thirty cents, whereas the family relief allotment was based on eighteen cents a day for the baby. The physician who is alert to the interests of his patients will rely so far as he can on vitamin D enriched whole or evaporated milk and on sunlight, using pharmaceuticals only to assure that the vitamin intake is held up to, but not wastefully above, the recommended level. Where cost is an item, he will inform himself as to those preparations which will provide the required unitage at a minimum price in his community.

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., **23**, 201 (March), 1939.

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PUBLIC HEALTH

PUBLIC HEALTH FOR THE WORKER

J. G. Townsend, Medical Director
U. S. Public Health Service

(Although South Carolina is primarily a rural state the number of industries within our borders is increasing rapidly and the problem of the industrial worker is one which is assuming paramount importance to the medical profession. This paper, which was presented at the South Carolina Public Health Association Meeting, May, 1941, at Myrtle Beach, is a study of industrial hygiene, and we are glad to present it to our readers.

The author has been connected with the United States Public Health Service since 1913 and is eminently qualified to discuss the subject.—Editor.)

The condition and life of the industrial worker has socially and historically been one of the primary problems of national health. The development of modern industry brought man into close contact with physical and chemical forces of tremendous potency, and affected the people's health not only directly through the process of production but also indirectly by creating certain living conditions. The protection of labor, the creation of sound living and working conditions of a clean and healthy factory environment are of primary importance in a highly differentiated, highly specialized industrial society which not only has no room for unnecessary illness but actually *requires* healthy members in order to function properly.

As the magnitude and complexity of the problems created by the development of industry have increased, certain social mechanisms have been evolved to alleviate or solve these problems. Thus, from the early concept of industrial hygiene as remedial action for accidental injury incurred in the course of one's occupation, we have progressed to the point where today the concept that the health of the industrial worker forms an integral and inseparable part of the health of the community finds wide acceptance. It is recognized today that industrial health is an important component of public heath, and, as such, is much more than control of industrial accidents and occupational diseases. The importance of accidents and occupational diseases should not be minimized, but emphasis should be placed on the application of preventive medicine to the groups of individuals who are to be found employed in all the various ramifications of industry if we are to bring to them the positive side of health—namely, increased vitality, capacity, and efficiency of the human body.

An analysis of the health problems affecting all wage earners and of the present day activities in the field of industrial hygiene will serve to indicate more clearly what may and should be accomplished in order to achieve this objective.

Scope of the Problem

Industrial hygiene may be defined as the science of the preservation of the health of workers. It therefore involves a program which necessarily extends beyond the prevention of accidents and occupational diseases to include the general health of the worker. It is obvious that some of the problems arise from the nature of the industrial environment itself—namely, the control of poisons, dusts, excessive temperatures and humidities, defective lighting, noise, over-crowding, and general plant sanitation. They also include such factors as hours of work, fatigue, communicable diseases in the factory, mental health, and personal hygiene.

Although in the past, industrial hygienists have concentrated their efforts on the control of certain health hazards in the manufacturing, mechanical, and mineral industries, it is well known that health problems worthy of attention also exist in other occupational pursuits. According to the last Federal Census, the total labor force of the United States is 52,000,000 persons. Obviously the health problems of a group which comprises such a large proportion of our total population are of tremendous importance to those persons and agencies concerned with public health in

general. Furthermore, when we realize that practically all the remaining population is dependent upon these 52,000,000 workers for their existence, and that the health of all may be affected by the health status of the gainful worker, then, indeed, industrial hygiene takes on an importance heretofore not recognized.

In order to plan and execute intelligently the necessary measures for the protection and improvement of the health of workers, it is necessary to evaluate the present health status of workers, that is, the incidence of industrial accidents and occupational diseases and the excessive frequency of other diseases in any occupational group. Such an evaluation shows that despite years of continued improvement in industrial hygiene, industrial accidents in the United States still cause 17,000 deaths, 75,000 permanent and 1,400,000 temporary disabilities, annually. Recent surveys of industrial plants throughout the Nation show that more than 1,000,000 persons are engaged in work where industrial dusts can create a serious health hazard under certain conditions, nearly 1,000,000 persons are handling lead and its compounds, and another 50,000 are using mercury and its compounds. In addition, many millions of workers are exposed to materials which may produce disabling skin diseases.

Of greatest significance, however, is the enormous waste of life and efficiency resulting from non-industrial illness among workers. As a matter of fact, the amount of time lost from work, because of ordinary illnesses, is 15 times as great as the total time lost due to accidents and occupational diseases combined. It has also been demonstrated that industrial workers have a higher rate of physical defects than do non-industrial workers, and that excessive mortality is especially notable among unskilled employees, whose death rate from all causes is 100 percent or more in excess of the rate among agricultural workers.

All of these facts have an important bearing on the industrial health problem, since an adult population is invoved. The health problems peculiar to workers as a group may be effectively solved by the application of those public health methods which have operated so successfully in the control of specific illnesses affecting other units of the population.

The Development of Industrial Hygiene

If we examine the early history of industrial medicine, we will find that the chief function of industrial medical departments was the treatment of traumatic injuries. Gradually, the work of the medical department began to extend beyond surgical treatment to the medical phases of the problem. Such functions as preemployment and periodic physical examinations job placement, and, more recently, medical and engineering control of occupational diseases, began to take their rightful place in industry. Where, in the past, attention was given mainly to the improvement of machinery, recent activities have been directed to the economic waste resulting from failure to provide protection against controllable health hazards. One of the primary stimuli to the introduction of more adequate medical services in industry has been the passage of workman's compensation laws for accidents and occupational diseases. Today, all but one state have laws providing benefits in the event of accidental injury, and 24 of these states have enacted legislation compensating workers for one or more occupational diseases.

Responsibility for safeguarding the health of our workers rests chiefly with state and local government. The agencies of the Federal Government concerned with industrial hygiene are engaged primarily in the collection and dissemination of information, conducting field studies, laboratory research and protection of the health of Federal employees. Prior to 1936, most states dealt chiefly with matters of safety, sanitation, employment of women and children, and compensation of employees following accidents.

When funds were made available by the Social Security Act for the development and extension of all branches of public health work, the United States Public Health Service, in cooperation with the Conference of State and Provincial Health Authorities of North America, inaugurated a program designed for the purpose of establishing active industrial hygiene work in state and local health departments.

In the period elapsing since the passage of the Social Security Act, the development of industrial hygiene has been rapid; today, 32 states and several cities have industrial hygiene services. If our progress continues at the same pace, it may in time attain a level commensurate with its value to the national economy.

In spite of the great progress in industrial hygiene during the past few years, the results of a recent survey of some 17,000 establishments employing nearly 1,500,000 workers in 15 states clearly indicate the need for a more effective and adequate program in industrial hygiene. When we realize that only one-fourth of the workers in the plants surveyed had the services of a full time safety director, that only 15 percent were provided with a plant physician, and about one-third with a full time plant nurse, then we are brought face to face with the fact that our provisions for maintaining and improving the health of workers are far from adequate. In addition, this study clearly showed that measures for the control of many hazardous exposures are also limited. All of these findings indicate the need of concerted effort on the part of industry, governmental agencies, and others, for an effective program in industrial hygiene.

From all of the information presented thus far, it should be apparent that the protection and improvement of the health of our workers should be an integral and indispensable part of a public health program. Today there is sufficient knowledge concerning the effects of varous toxic materials and environmental conditions on the health of the worker. Also, our information on methods for the control of the majority of the health hazards in industry has reached a stage where it may be successfully applied. It should be our aim, therefore, to close the gap between our knowledge of how to control and prevent industrial health hazards and the practical application of this knowledge. It is also evident that it will be necessary not only to control unhealthful conditions in the working environment, but also to give consideration to such factors as proper living conditions, elimination of strain and hurry, nutrition and communicable diseases; in fact, to a general adult health program for workers. A broad industrial health program of this character, to progress satisfactorily, must be closely interwoven with existing public health activities and with the activities of many other official and nonofficial agencies concerned with the various aspects of industrial health.

A Program for an Official State Agency

Earlier in this discussion, it was shown that today there are 32 state health departments and several cities and Territories active in the field of industrial hygiene. In assisting the states in the development of their programs, the Public Health Service has advocated the following functions:

1. Consultation with plant management regarding needed corrections of environmental conditions.

2. Advice to the management and medical supervisor as to the relative toxicity of materials or processes, and advice concerning new materials prior to their introduction into the industry.

3. Assistance in developing, maintaining, and analyzing absenteeism records.

4. Consultant service to medical supervisors, private physicians, compensation authorities, and other State agencies regarding illness affecting workers.

5. Provision of necessary laboratory service of both a clinical and a physical nature.

6. Integration of the activities of other public health bureaus in their programs for workers; for example, the control of cancer, syphilis, and tuberculosis.

The determination of the scope and nature of the industrial health problem in a given locality has been completed in most of the states. The fundamental information obtained in these studies forms a basis for many of the activities just listed. To accomplish these activities successfully, it will be necessary to integrate the work of the industrial hygiene division not only with other health services in the health department, but also with the work of other state agencies concerned with industrial health matters and with nonofficial organizations. Just how this may be accomplished may be illustrated by a few examples from actual experience.

Interdepartmental relationships. — Excellent interdepartmental relationships for the promotion of industrial hygiene activities now exist in a number of states, and notably in such states as California, Wisconsin, North Carolina, Rhode Island, and Idaho. For example, in the state of California, the industrial accident commission furnishes the industrial hygiene service of the state health department with copies of all occupational diseases reportable by law to the former agency. These are investigated by the health department. In addition, the factory inspectors of the commission call upon the industrial hygiene service of the health department to make technical investigations of potential health hazards in industry. Written copies of the results of such investigations are furnished to the industrial accident commission for action, since it is this latter agency which is charged by law to enforce rules and regulations designed for the protection of the health of workers. Practically identical relationships exist in Wisconsin.

In North Carolina, the occupational disease law provides that the industrial commission shall adjudicate the law and shall make investigations of health hazards in certain industries where a silicosis and asbestosis hazard exists. In these industries, preemployment and periodic examinations are required by law. The industrial commission has designated the North Carolina State Board of Health as its agent, and all investigations and physical examinations are conducted either by the State Department of Health, or under its supervision. Furthermore, the director of the industrial hygiene division of the State Department of Health of North Carolina is also the chairman of the medical board of the industrial commission. This close relationship between the two agencies most concerned with industrial hygiene activities in North Carolina has resulted in an execellent program of control of health hazards in industry.

Integrated services.—With reference to the integration of industrial hygiene services with other public health activities in a state department of health, some progress has been accomplished, but still much remains to be done. Many of our health departments have limited the scope of their activities. It is realized, of course, that the primary function of a health department is the control of communicable diseases. There is no reason, however, why the scope of health work in this country should not be extended to include the prevention of chronic diseases. There is ample justification for such efforts. For example, it has recently been shown that the first 10 causes of death account for more than 79 percent of all deaths. Against only one, tuberculosis, have health departments in the past taken specific action. It is only in the last few years that any action has been taken with reference to some of the other leading causes of death. By contrast, the communicable diseases, on which most of our efforts are still directed, account for only 3 percent of the mortality in this country. If illness be used as a measure of needed services, then health departments should concentrate on upper respiratory diseases and digestive disorders. It would seem, therefore, that by approaching the adult health problem through industrial hygiene, emphasis will be given to those conditions now in need of evaluation and correction.

It should be evident that no industrial hygiene division, no matter how large, can cope successfully with all the problems before it unless its program is definitely coordinated with all the other health activities and with those of other agencies in a community. One illustration of such an integrated effort is pertinent at this time. Recently, the Division of Industrial Hygiene of the National Institute of Health conducted a cooperative study with the Utah State Board of Health, concerning the nature and extent of occupational diseases in that state. The information so obtained has been used as a guide in the enactment of legislation for the compensation of injuries to health resulting from exposure to industrial health hazards and in the support of a permanent program designed to control such hazards.

Without going into the details of the study, it is pertinent to list the various health services in the State Department of Health which cooperated in the investigation. For example, the district health officers of the areas in which

the studies were made took an active part in assisting Service physicians in the physical examinations of the various workers. All serological examinations were made by the State Board of Health laboratories. The dental division of the State Board of Health furnished the services of a dentist for oral hygiene studies. The division of epidemiology collected information on the prevalence of various diseases in the communities in which the establishments studied were located. With reference to the environmental investigation, the State Division of Engineering assisted in the study of the working environment and also made sanitary surveys in the communities in which the workers live. Thus, we have information not only on the exposures of the employees while at work, but also on the conditions under which they live. It is evident that by such an integratetd program, public health is being practiced more effectively in Utah, and industrial hygiene takes on its real meaning—that is, health promotion among workers. In all of this work in Utah, excellent cooperation was received from organized labor, industry, the medical profession, and especially, from the industrial commission.

Public Health Approach to Industrial Hygiene Problems

At the present time, most state industrial hygiene units employ a very small number of personnel, usually a physician, an engineer, a chemist, and a secretary. Here in South Carolina I understand that the industrial hygiene division consists of a physician, an engineer, and a secretary. It should be evident that if all the factors influencing the health of our workers are to be considered, then it is necessary to draft all the resources at the disposal of a department of health as has been done in the example cited above. This is a perfectly legitimate view of the problem, if we pause to consider the method of approach which may be employed. For example, no one would dispute the fact that many of the diseases of childhood are not directly associated with the school environment; yet, this fact has not deterred our health departments and physicians from doing their most effective work in the prevention of childhood diseases through the medium of the school.

The same procedure may be used in combating our adult disease by approaching the problem through the medium of the factory. The southern health officer may feel that, with the limited number of so-called industrial workers in his state, industrial hygiene activities are not justified. Yet, there is no reason why health departments cannot carry on a program of nutrition, venereal diseases, tuberculosis, or malaria control through the industrial groups. Malaria, for example, causes a loss of 14 days per year per man in southern industry, and according to some estimates is responsible for a reduction in the industrial output of the south by one-third.

By approaching the problems of adult health through the medium of the factory, health departments will be practicing effective public health among a vast number of people. At present such programs employ the home as a means of contact. When it is considered that industrial hygiene applies to the general health of the worker and not merely to his special occupational hazards and that there is definite need for the extension of the public health program among all gainfully employed adults, regardless of the type of employment, the broader approach to industrial health will commend itself to the modern public health worker as an effective and economical means of advancing the community health program.

In closing this discussion, it is desired to emphasize that our problems in industrial hygiene will be constantly increasing, rather than diminishing, in spite of all our efforts in the field. This is largely due to the fact that added responsibilities are given to administration due to a variety of causes. Increased mechanization in industries, the use of old and new chemical compounds in many industrial processes, the responsibilities given us by legislation, and those which have arisen out of the defense program, all of these factors and many more too numerous to mention, will add greatly to the burden of industrial hygienists in the future. It is essential that we continue to develop and broaden our programs in order to meet these exigencies as they arise.

AROUND THE STATE

Effort will be made to secure and publish news concerning the activities of individual physicians, and of the various medical societies of the state. Members of the Association, and especially secretaries of county societies, are urged to send in news items to the Editor.

DEATHS

Dr. George Dawson Walker, 62, of Johnston, died on September 29, 1941.

Dr. Walker, a general practitioner of the old school, had practiced medicine in Johnston for over thirty-five years. The great love, esteem and high appreciation in which he was held was evidenced by the great number who came to his funeral, the attendance being so large that less than half could be accommodated in the large church. At the hour of the funeral all stores and places of business in town were closed.

He is survived by his widow, Mrs. Nina Ouzts Walker and three children, James L. Walker of Johnston, Miss Elizabeth Walker of Columbia and Miss Margaret Walker of Hartsville.

Dr. Allston Moore Willcox, 62, of Conway, died on October 2nd. Dr. Willcox was graduated from the Medical College of the State of South Carolina in 1913 and served as a first lieutenant during the first World War. He is survived by his widow and two daughters.

Dr. Henry Norris, retired surgeon and founder of the Rutherfordton Hospital, died at his Litchfield plantation home, Waccamaw, October 6th. Dr. Norris was a prominent and outstanding surgeon of North Carolina until his retirement several years ago. During the World War he served as Division Surgeon of the Thirtieth Division. He is survived by two daughters and a son.

Notice has been received of the death of Dr. John Julius LaRoche, Jr., of Charleston. Born in 1887, Dr. LaRoche was graduated from the Medical College of the State of South Carolina in 1911. For several years Dr. LaRoche has been Associate Professor of Medicine at his Alma Mater.

NEWS ITEMS

Drs. R. B. Taft of Charleston, P. D. Hay of Florence, and W. S. Judy of Greenville, attended the Annual Convention of the American Roentgen Ray Society at Cincinnati. These three physicians are all members of this organization.

Dr. H. R. Coleman, Otolaryngologist, formerly of Columbia, has moved to Wilmington, North Carolina.

Dr. Wardlaw Hammond formerly of Greenville is now located at Camp Stewart, Georgia.

Dr. George Dean Johnson of Spartanburg was married on October 11, 1941. Mrs. Johnson was the former Miss Betty Heath.

Among those who attended the American Academy of Pediatrics in Boston were Drs. William Weston, Jr., and R. B. Josey of Columbia and Drs. D. L. Smith and D. L. Smith, Jr., of Spartanburg.

Dr. Jack Bell of Greenville and Miss Mary McLees of Greenwood were married on October 25, 1941.

Drs. John Fleming, P. M. Temple, L. H. Coleman and H. W. Koopman of Spartanburg attended the Central Association of Obstetricians and Gynecologists Meeting at New Orleans.

Dr. D. C. Bozard of Manning was one of the many Dodger fans who witnessed at first hand the World Series.

Speaking of golf, the following was found in the sports column of the News and Courier, October 20, 1941:

Our bulky friend, Dr. Hank Hoshall fought a thrilling, uphill battle in advancing to the second round of the tournament. Hank forgot he was qualifying and got into the second flight by mistake and when the pairings were posted he found he had to play Eddie Entwistle.

On the last day for playing first round matches Hank was in the locker room, sweating profusely in the palms. At 2:30 p. m. he had shed a pool of perspiration from multitudinous pores. (That boy, incidentally, has got plenty of pores.)

Finally the clock on the wall indicated it was 3 o'clock. Entwistle hadn't showed up. Hank majestically strode up to the board and, with a shaky hand, inscribed in bold letters: "Hoshall wins by default."

Dr. L. E. Madden and Dr. S. D. Pope of Columbia recently went to New York to attend a special meeting of the Academy of Medicine.

Dr. George Smith of Florence, an officer in the Medical Corps of the United States Army, is now located in Porto Rico.

Dr. John H. Murdoch, Jr. and Dr. John M. Settle have recently joined the Medical Society of South Carolina, Charleston.

Dr. Robert Wilson, Dean of the Medical College of the State of South Carolina, and Dr. Wm. Atmar Smith, Medical Director of Pinehaven Sanatorium, attended the three-day meeting of the American Clinical and Climatological Association, at Skytop, Penna., beginning October 15th. Dr. Smith presented a paper on "Cystic Diseases of the Lungs."

According to a joint statement issued on September 4 by the U. S. Director of the Office of Civilian Defense, F. H. LaGuardia, and the Chairman of the American National Red Cross, Norman H. Davis, State and local defense councils are the official agencies responsible for the coordination of all available resources which may be required for civilian protection in the event of belligerent action. Defense Councils should therefore acquaint themselves with the resources of the local Red Cross Chapters in providing food, clothing, shelter, nursing care, transportation, and other basic necessities and should integrate them into the comprehensive local program. Duplication of trained and experienced personnel and of available supplies of the Red Cross should be avoided except where supplementation is essential to meet the anticipated needs of the community.

SOCIETY REPORTS

Dr. John Scudder of the Department of Surgery, Columbia University, College of Physicians and Surgeons, addressed a joint meeting of the Medical Society of South Carolina and the Staff of Stark Army General Hospital in October.

At the regular meeting of the Columbia Medical Society in October Dr. Fred W. Rankin of Lexington, Kentucky, President-Elect of the American Medical Association, delivered a paper on **Modern Management of Peptic Ulcer.** The local speaker of the evening was Dr. Katherine MacInnis of Columbia who discussed **Bronchial Asthma.**

The regular meeting of the Oconee Medical Society was held on October 13th. Following a delightful banquet at the local hospital at which the physicians and their wives were the guests of Miss Etta Robbins, Hospital Supervisor, Dr. S. H. Ross, Fort McClellan, Alabama, discussed the **Army Medical Corps** and Dr. George Wilkinson of Greenville presented a paper on **Amebiasis.**

The October meeting of the Spartanburg County Medical Society was held at Camp Croft, S. C. with the medical staff of the Camp Croft Hospital in charge of the program.

The October meeting of the Greenville County Medical Society was designated as The Medical College of the State of South Carolina meeting. The scientific program was composed of three papers by three members of the faculty of that institution. Dr. Edward F. Parker, Associate Professor of Surgery, discussed **Present Knowledge of Shock.** Dr. William H. Kelley, Professor of Medicine, spoke upon the subject of **Diseases of the Aorta.** Dr. Robert Wilson, Dean and Professor of Medicine, presented a paper on **Diagnosis of Coronary Disease.**

The Fourth District Association met on October 14th in Union with the Union County Medical Society as hosts.

Pathological Conference, Medical College of the State of South Carolina

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

Case of Dr. Robert Wilson, Jr.

ABSTRACT NO. 441

Student T. G. Herbert, Jr. (presenting):

History: 13 year old negro girl admitted on 9-3-41 with chief complaint of "pain in stomach." Onset two weeks before admission and characterized by a generalized aching and an occasional sharp pain in the abdomen. Felt feverish; no chills. Vomited practically everything taken by mouth since onset of illness. One week ago noted progressive distension of the abdomen. Had some dyspnea on exertion, weakness, dizziness, "swinging in the head," palpatation since onset.

Past History: Felt well until onset of present illness. Tonsillectomy at Harlem Hospital eight years ago. Frequent headaches.

Physical Examination: T. 99.2, P. 92, R. 22, BP. 145/100; also 160/100. Revealed a fairly well nourished and developed negro girl who appeared acutely ill, weak and dyspneic. Eyes: Slight puffiness about eyes. Pupils react normally. No jaundice. Fundi: discs pale; veins dilated; some edema of discs; arteries silver-wire in places and light streak irregular; vessels tend to be small and tortuous. Ears and nose normal. Teeth moderately carious. Tongue furred. Throat not unusual. MM—marked pallor. No lymphadenopthy. Skin dry; numerous scars on lower extremities. Ulcer on right leg anteriorly. Chest and lungs normal. Heart: enlarged to the left. PMI in 5th. ICS outside MCL. Blowing systolic murmurs at aortic and pulmonary areas; blowing, rumbling presystolic and systolic murmurs at the apex. Bounding pulse. Abdomen moderately distended and tense. Fluid wave elicited. Liver and spleen not felt. Tender throughout lower abdomen with voluntary rigidity 2 in. below and to the right of umbilicus. Reflexes: sluggish. Extremities normal, except for lesions described.

Laboratory:

Urinalysis	9-4-41	9-8-41	9-15-41
Spec.	Vd.	Vd.	Vd.
App.	Pale turbid	Same	Same
Sp. Gr.	1.005	———	1.009
Reaction	Acid	Acid	Acid
Albumin	Three plus	Three plus	Three plus
Sugar	0	0	0
Acetone	0	0	0
RBC	100	6	10
WBC	0	100-clumps	10
Casts	0	0	0
Epith.	One plus	One plus	———

Blood 9-4-41
RBC 1.37
WBC 7,200
Hb. 7.5 gms.
PMN. 75%
Lymphs 15%
Eosino. 10%
RBC. Just shadows, aniso and poikiliocytosis, suspected sickling.
9-6-41 No sickling in sealed preparation in 36 hours.
EKG: Left ventricular pueponderance.
9-7-41 Urea N—157 mg.
Creatinin—15.6 mg.
9-21-41 162 mg.
18.36 mg.
Wassermann and Kline negative.

Course: Vomiting continued. Face remained puffy with evidence of fluid in abdomen. Tenderness in both costo-vertebral angles. Convulsions on 9-16-41 and 9-17-41. Comatose on 9-22-41 and temperature up to 101.2. Expired on 9-22-41 at 9:55 P. M.

Dr. Robert Wilson, Jr. (conducting): I may add that while this patient was in the hospital she insisted on having every meal, ate each one that was brought to her with good appetite, and then vomited everything she ate.

Mr. Berry, will you open the discussion of this case?

Student Berry: Here we have a patient that was admitted in a practically uremic state and progressed steadily downhill to death. I think that chronic nephritis is the most logical disease condition to consider. We have a number of clinical and laboratory findings to bear out this diagnosis. Puffiness under the eyes, elevated blood pressure, hematuria and albuminuria, continued low specific gravity, ascites and changes in the eye grounds all help to confirm this impression.

I believe that the heart murmurs are purely functional, as we have no other reason for them.

Among the other conditions that might conceivably produce this sequence of events and terminal picture, there are congenital polycystic kidneys, but no masses were palpable in the kidney regions of this case and I believe the kidneys can usually be felt. Nephrosclerosis would undoubtedly produce the same state of affairs, but I am not sure whether it occurs in a child of this age and if it does it must be very rare. A long standing hydronephrosis from blockage, due to some congenital defect would also do the same.

Dr. Wilson: Why do you believe this to be chronic kidney disease rather than acute?

Student Berry: There is usually an accompanying history of some upper respiratory infection in an acute which we do not have here. My diagnosis is chronic glomeurlonephritis.

Dr. Wilson: Do you think a presystolic murmur is ever functional?

Student Berry: No, I do not. I don't think it can adequately be explained.

Dr. Wilson: Mr. Martin, do you think the best differential points between acute and chronic nephritis are those that have been mentioned?

Student Martin: I don't believe that the fundal findings that we have here would occur in acute nephritis. The lack of history of any acute infection prior to the kidney involvement also point away from acute nephritis.

Dr. Wilson: I don't believe the lack of history of an acute respiratory infection is as important as a positive finding, such as the eye-ground changes. Can you explain the presystolic murmur?

Student Martin: No, I cannot.

Dr. Wilson: Do you think it was an error in clinical judgment, a mistake? You can speak freely, you don't know who made the observation.

Student Martin: That's what worries me. (Laughter).

Dr. Wilson: Mr. Quisenberry, what do you consider the chief differential points in distinguishing between chronic and acute nephritis?

Student Quisenberry: The permanent low specific gravity with a probable polyuria are characteristic of the chronic variety. We would expect to find a high specific gravity with anuria in an acute case. Enlargement of the heart with a left ventricular preponderence points to actual hypertrophy and not just dilatation which would indicate that the disease had been going on for some time. The silver wire arteries certainly suggest a chronic process.

Dr. Wilson: What do you think of the presystolic murmur, provided that I am not the one responsible for the observation?

Student Quisenberry: In that case I don't think much of it. (Laughter). I do not believe she had an organic lesion; no valvular defect.

Dr. Wilson: What sort of treatment do you think she should have had?

Student Quisenberry: I would have cut down on foods causing a high nitrogenous concentration and given her a good deal of fluid in an effort to rid her system of the nitrogenous products by the passage of more urine.

Dr. Wilson: Do you think she should have had a blood transfusion?

Student Quisenberry: Yes, I think it would be almost a matter of necessity with such a profound anemia.

Dr. Wilson: Sickle cell anemia was the impression of the first examiner at the time of her admission. We thought she had acute nephritis at first, but the presistent hypertension, enlargement of the heart. fundal changes and low specific gravity led us to make a diagnosis of chronic glomerulonephritis.

Dr. Kelley: I think the evidence points strongly to chronic nephritis. One other renal lesion that the patient may have had is a very protracted chronic. low-grade pyelonephritis

Dr. Wilson, Sr.: The presence of ascites is not consistent with a diagnosis of chronic nephritis. If she had ascites I would expect her to have had something else in addition.

Dr. Beach: This child had a tonsillectomy performed eight years ago. At that time she was out of her natural habitat and I strongly suspect that this was done to remove a focus of infection, that might even at that time have been the beginning of the kidney disease that finally killed her. If she had a presystolic murmur then, she may have had a rheumatic infection. If the presence of the presystolic murmur is an accurate finding, I expect to see a valvular defect.

Dr. Lynch: (Demonstrating Heart and Kidney): We are very often unable to get the story of the initial onset in cases of this type. I agree with Dr. Beach that she probably had an acute infection at the time of her tonsillectomy. This is as classical a case of chronic glomerulonephritis as you will ever see. The contracted scarred kidneys that you see here. together weigh only 90 gms. The kidneys failure is not due primarily to an inflammatory fibrosis, but on account of the destruction of the glomeruli. The heart shows moderate hypertrophy. and some dilatation of the right and left chambers. There are no valvular lesions. She had a definite bilateral hydrothorax and ascites. We do not know all that we should about edema, but with an anemia this severe, I should think that changes would occur in the chemical and physical characteristics of the blood and tissues that would account for it. I would like to know if it is possible to get abdominal pain in helminthiasis, as ascaries were found in her intestines.

Dr. Beach: Yes, you can get pain with parasitic infection, as the worms are capable of causing obstruction. I think that it is quite possible that this patient had some nutritional edema as well as a nutritional heart.

Dr. Lynch: In that case the obstruction really causes the pain and not the worms directly. I agree that she must have had a food deficiency, on account of the long continued vomiting, if for no other reason.

Dr. Kelley: Did she have a uremic colitis?

Dr. Lynch: No, there was no evidence of such a condition. Neither did we find the rather wise spread vascular sclerosis after associated with chronic kidney disease.

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THE SOUTHERN MEDICAL ASSOCIATION

The 35th annual meeting of the Southern Medical Association will he held in St. Louis, Monday, Tuesday, Wednesday and Thursday, November 10-13. The official activities of the Association will begin on Monday rather than the usual day Tuesday as originally planned, and close Thursday afternoon at 6 P. M. With the exception of this one-half day change, the meeting will be as scheduled. The St. Louis program will begin Monday afternoon and will be concluded at noon on Tuesday, the program being short clinical presentation by physicians from St. Louis. Tuesday afternoon the general clinical session, a program arranged and conducted by the President, will be presented. Then from Tuesday noon through Thursday afternoon the nineteen sections of the Association and the three conjoint societies will be in session.

On Tuesday evening, as a feature of the General Session, Dr. Paul H. Ringer, President of the Association will deliver his presidential address, this to be followed by the President's reception and ball.

The Scientific Exhibits space has been completely filled which will insure one of the most interesting parts of the meeting.

All scientific activities will be at the St. Louis Municipal Auditorium, which is conveniently located to all the downtown hotels.

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WOMAN'S AUXILIARY

SOUTH CAROLINA MEDICAL ASSOCIATION

ACTIVITIES OF AUXILIARY MEMBERS THROUGH PUBLIC RELATIONS PROGRAM

Mrs. Emmett Madden of Columbia, Chairman of the Public Relations Committee of the Auxiliary to the South Carolina Medical Association, brought an inspiring message to members of the Executive Board who met in Greenville on the 8th of October. Mrs. Madden asked that each Auxiliary member inform herself as to the health needs of her community, cooperate with organizations engaged in health work, and suggest health programs to program committees of other clubs to which she belongs.

The Auxiliary to the South Carolina Medical Association has as a guide a definite program of activities planned by the Public Relations Chairman of the Auxiliary to the American Medical Association. This program appears in the Post Convention issue of the Bulletin of the Woman's Auxiliary, and should be adjusted to the needs of the community by each county chairman.

This program suggests that we familiarize ourselves with the work of the State Department of Health, the aims of the local medical society with respect to community health needs, the objectives of the American Medical Association concerning a national health program, and the achievements of American medicine.

Under "Organization Policies and Plans" we are, as leaders of health education, urged to observe rigidly the first rule of procedure for all auxiliary work: Do nothing without the approval of the Advisory Council.

We are charged with the duty of informing ourselves regarding medical activities of lay organizations and cooperating with such groups in the promotion of acceptable medical programs; such as maternal and child welfare, anti-tuberculosis, cancer education, communicable diseases, mental hygiene and nutrition. We should assist lay groups in securing authentic speakers on health subjects. When invited to do so we should provide program material from American Medical Association headquarters for health dramas, diet and nutrition pamphlets, literature on health and medical economics, exhibits on health, copies of hygeia, etc.

The committee is particularly interested in Home Defense. A survey of the auxiliary in South Carolina showed that the members are active in both civilian and defense work through such organizations as the American Red Cross, the Parent-Teacher Association, Community Chest, and as members of Boards and Committees interested in welfare and social problems.

County Auxiliaries situated near army camps have made friendly contacts with families of doctors in service by inviting the wives to auxiliary meetings and to especially arranged social affairs.

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